METHOD AND APPARATUS FOR ENHANCING THERMAL STABILITY, IMPROVING BIASING AND REDUCING DAMAGE FROM ELECTROSTATIC DISCHARGE IN SELF-PINNED ABUTTED JUNCTION HEADS HAVING A FIRST SELF-PINNED LAYER EXTENDING UNDER THE HARD BIAS LAYERS

ABSTRACT

A method and apparatus for enhancing thermal stability, improving biasing and reducing damage from electrical surges in self-pinned abutted junction heads. A first self-pinned layer having a first magnetic orientation is provided, wherein the first self-pinned layer has a first end, a second end and central portion. A second self-pinned layer is formed over only the central portion of the first self-pinned layer and an interlayer is disposed between the first and second self-pinned layers. A free layer is formed in a central region over the second self-pinned layer. First and second hard bias layers are formed over the first and second ends of the first self-pinned layer respectively, the first and second hard bias layer abutting the free layer, the first and second end of the first self-pinned layer extending under the hard bias layers at the first and second ends.